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AF/1731

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

**STROMBERG**

Atty. Ref.: 10-1322

Serial No. 09/722,420

Group: 1731

Filed: November 28, 2000

Examiner: Alvo, M.

For: **ENVIRONMENTALLY-FRIENDLY FIBERLINE FOR PRODUCING BLEACHED  
CHEMICAL PULP**

\* \* \* \* \*

September 22, 2003

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**RESPONSE TO REQUIREMENT TO SUPPLY APPEAL BRIEF**

Sir:

Responsive to the Official Action dated September 16, 2003, applicants submit that an Appeal Brief was filed concurrently with the Amendment filed on July 9, 2003 as evidenced by the attached copy of a postal receipt card bearing a Mail Room stamp dated July 9, 2003.

In compliance with the request made in the Office Action of September 16, 2003, there is attached hereto a copy of that Appeal Brief.

Respectfully submitted,

**NIXON & VANDERHYTE P.C.**

By:

Bryan H. Davidson  
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Serial No.: 09/122,420  
Applicant: Stromberg  
Title: Environmentally -  
Friendly Fiberling etc.  
X  
Amendment  
Pages Specification  
Claims  
Sheets Drawings: Formal  
Informal  
Declaration ( Pages)  
Assignment  
Priority Document  
Base Issue Fee Transmittal  
Fee (Check)

Atty: BHD  
Date: 7-9-03  
Client: 10  
Ref: 1322

Other:



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Amendment  
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Assignment  
Priority Document  
Base Issue Fee Transmittal  
Fee (Check)

Atty: BHD  
Date: 7-9-03  
Client: 10  
Ref: 1322

Other: Applicant's Second Brief on  
Appeal (in Triplicate)





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Before the Board of Patent Appeals and Interferences

In re Patent Application of

Atty Dkt. 10-1322

STROMBERG

C# M#  
Group Art Unit: 1731

Serial No. 09/722,420

Examiner: Alvo, M.

Filed: November 28, 2000

Date: July 9, 2003

Title: ENVIRONMENTALLY-FRIENDLY FIBERLINE FOR PRODUCING BLEACHED  
CHEMICAL PULP

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**COPY**

Sir:

☐ Correspondence Address Indication Form Attached.

☒ **NOTICE OF APPEAL**

Applicant hereby appeals to the Board of Appeals from the decision dated  
April 9, 2003 of the Examiner twice/finally  
rejecting claims 1-16 and 23-24 (\$ 320.00 )

\$ 320.00

☒ An appeal **BRIEF** is attached in triplicate in the pending appeal of the  
above-identified application (\$ 320.00)

\$ 320.00

☒ Credit for fees paid in prior appeal without decision on merits

-\$ ( 640.00)

☐ A reply brief is attached in triplicate under Rule 193(b)

(no f )

☐ Petition is hereby made to extend the current due date so as to cover the filing date of this  
paper and attachment(s) (\$110.00/1 month; \$410.00/2 months; \$930.00/3 months; \$1450.00/4 months)

**SUBTOTAL** \$ 0.00

☐ Applicant claims "Small entity" status, enter 1/2 of subtotal and subtract

-\$ ( )

☐ "Small entity" statement attached.

**SUBTOTAL** \$ 0.00

Less month extension previously paid on

-\$ ( 0.00)

**TOTAL FEE ENCLOSED** \$ 0.00

Any future submission requiring an extension of time is hereby stated to include a petition for such time extension.  
The Commissioner is hereby authorized to charge any deficiency, or credit any overpayment, in the fee(s) filed, or  
asserted to be filed, or which should have been filed herewith (or with any paper hereafter filed in this application by this  
firm) to our **Account No. 14-1140**. A duplicate copy of this sheet is attached.

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NIXON & VANDERHYE P.C.  
By Atty: Bryan H. Davidson, Reg. No. 30,251

Signature: 



**COPY**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Patent Application of

**STROMBERG**

Atty. Ref.: **10-1322**

Serial No. **09/722,420**

Group: **1731**

Filed: **November 28, 2000**

Examiner: **Alvo, M.**

For: **ENVIRONMENTALLY-FRIENDLY FIBERLINE FOR  
PRODUCING BLEACHED CHEMICAL PULP**

\* \* \* \* \*

July 9, 2003

Honorable Commissioner of Patents  
and Trademarks  
Washington, DC 20231

**APPLICANTS' SECOND BRIEF ON APPEAL**

Sir:

Applicant hereby appeals the Examiner twice-rejecting claims 1-16 and 23-24 in the Official Action dated April 9, 2003.<sup>1</sup> As will become evident from the following discussion, the Examiner's art-based rejections are in error and, as such, reversal of the same is solicited.

**I. PROCEDURAL BACKGROUND**

A first Appeal Brief was previously filed in this application on January 30, 2003 pursuant to a timely Notice of Appeal filed on October 30, 2002. In response, the Examiner issued the non-final Official Action dated April 9, 2003, in which claims 1-25

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<sup>1</sup> The Appendix hereto sets forth the claims on appeal.

were again rejected on the merits citing new publications in support. It is therefore in response to the non-final Official Action of April 9, 2003 that this second Appeal Brief is being filed.<sup>2</sup>

## **II. REAL PARTY IN INTEREST**

The real party in interest is the assignee, ANDRITZ, Inc.

## **III. RELATED APPEALS AND INTERFERENCES**

The appellant and the undersigned are not aware of any related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

## **IV. STATUS OF CLAIMS**

Claims 1-16 and 23-24 are pending and have been rejected. No claims have been substantively allowed.

## **V. STATUS OF AMENDMENTS**

An Amendment is being filed concurrently herewith in which prior pending claims 17-22 and 25 are cancelled thereby leaving claims 1-16 and 23-24 pending herein. The cancellation of claims 17-22 and 25 thereby moots the Examiner's rejections against such claims as advanced in the Official Action dated April 9, 2003.

## **VI. SUMMARY OF INVENTION**

The present invention provides, in general, an environmentally-friendly and commercially viable process for producing fully-bleached cellulose pulp from comminuted cellulosic fibrous material. (Page 5, lines 29-31) One embodiment of the present invention comprises a method of treating a slurry of comminuted cellulosic fibrous material to produce a bleached chemical pulp, comprising or consisting of the

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<sup>2</sup> As noted in Section V below, a concurrent amendment is being filed which cancels claims 17-22

following: a) treating the material in a first stage with a gas containing ozone; and b) treating the material in a second stage with a liquid containing chlorine dioxide; wherein between a) and b) the material is treated with an alkaline liquid to raise the pH of the material prior to b) and wherein no washing is performed between a) and b). Preferably between a) and b) the pH of the material is raised to at least about 6.0, preferably, at least 7.0. The present invention may be expressed by the notation (ZEND), where Z represents an acidic treatment with an ozone containing gas, EN is an alkaline neutralization treatment, and D is an alkaline treatment with chlorine dioxide; again, no washing is performed between these treatments. (Page 3, lines 17-27)

## **VII. ISSUES**

The following issues are presented for purpose of this appeal:

1. Did the Examiner err in rejection claims 1 and 3 under 35 USC §102(b) as allegedly being anticipated by Tsai (USP 4,959,124)?
2. Did the Examiner err in rejecting claims 1-3, 7-8 and 13-14 under 35 USC §103(a) as allegedly obvious over Tsai in view of Ambady et al (USP 5,645,687)?
3. Did the Examiner err in rejecting claims 4-6, 9-12 and 15-16 under 35 USC §103(a) as allegedly obvious over Tsai and further in view of the "admitted art" discussion in the specification appearing at page 2, lines 19-25?
4. Did the Examiner err in rejecting claims 23 and 24 under 35 USC §103(a) as allegedly obvious over Tsai in view of Ambady et al and the "admitted art" discussion in the specification appearing at page 2, lines 19-25, and further in view of Swedish Application 81020828 or Nimmerfroh?

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and 25 to thereby reduce issues for purpose of this appeal.

### **VIII. GROUPING OF CLAIMS**

The following groupings of claims are presented for purpose of this appeal and may be grouped in accordance with the rejections advanced by the Examiner:

Group I: Claims 1-3, 7-8 and 13-14

Group II: Claims 4-6, 9-12 and 15-16

Group III: Claims 23 and 24

### **IX. ARGUMENTS**

#### **1. The Examiner's rejection of claims 1 and 3 as allegedly anticipated by Tsai under 35 USC §102(b) is in error**

It is important to keep in mind the nomenclature employed in the Tsai patent. Specifically, it should be kept in mind that, in the Tsai patent, stages with no washing between them are identified by placing such stages within parentheses. Although the Examiner acknowledges such nomenclature in the rejections advanced in the Official Action of April 9, 2003, it appears that it has been misapplied as to the presently claimed invention.

Specifically, applicant notes that only one example, namely, Example 57, presents the bleaching series as D(ZE<sub>o</sub>)D. This is explained to mean (using the nomenclature presented in the Tsai patent that washing occurs between stages *unless* the stages are within parentheses), a D or chlorine dioxide stage followed by *washing* is followed by a Z or ozone stage with no washing, which is followed by an E<sub>o</sub> stage or extraction stage followed by *washing*, which is followed by the final D or chlorine dioxide stage.

While it is true that the Tsai patent discloses generally that the "...ozonation takes place immediately following chlorination and prior to extraction" (column 2, lines 47-50) it is equally true as noted from the above, that Tsai teaches that the E or extraction stage is followed by *washing* and then a D or chlorine dioxide stage.

It must be pointed out that, in the discussion of examples 8 and 9, the use of the parentheses is merely to clarify the sequence being used in the examples – **not** to indicate the sequence being used is done so without washing between stages. This is clear if a comparison is made with the discussion of Examples 6-13 with Table 2. That is, while the discussion presented in column 6, lines 33-51 uses parentheses, the Table does not indicate that the parenthetical expressions are being used not to identify the sequence without washing, but rather to clarify which sequence is being discussed in the text. Throughout the disclosure and discussion of Tsai, washing occurs between stages, but is not specifically stated as noted in column 2, lines 59-62. The absence of washing is only presented in Example 57 where it is explicitly stated that 'ozonated pulp...processed directly to an alkaline extraction stage (enhanced with oxygen) without an intervening water washing (ZE<sub>o</sub>).'" See column 11, lines 58-60. However, as already noted previously, washing does in fact occur between the E<sub>o</sub> or extraction stage and the a D or chlorine dioxide stage.

Thus, Tsai specifically teaches washing between ozonation and chlorine dioxide treatment and, as such, cannot possibly anticipate claims 1 and 3 pending herein since such claims require **no washing** to be practiced between such stages. Thus, reversal of the rejection based on Tsai under 35 USC §102(b) is in order.

**2. The Examiner's rejection of claims 1-3, 7-8 and 13-14 under 35 USC §103(a) as allegedly obvious over Tsai in view of Ambady et al is in error**

According to one aspect of the present applicant's invention, a series of stages, gaseous ozone treatment, followed by an alkaline extraction, followed by a liquid chlorine dioxide treatment are provided -- **all without wash steps between the stages.**

The inappropriateness of Tsai has already been discussed above. Simply stated, there is no explicit or implicit teaching in Tsai of a chlorine dioxide treatment stage following ozonation stage **without washing** therebetween. Ambady et al fail to cure such deficiencies.



In this regard, applicant notes that Ambady et al discloses numerous sequences. However, none of the disclosed sequences are "ZED" ***without washing*** – i.e., none are noted as "(ZED)". Moreover, Ambady et al explicitly disclose that "...the *essential* first and second acidic bleaching stages and alkaline bleaching stage are present." See column 4, lines 39-43. Hence, this criticality of sequences explicitly disclosed by Ambady et al would not lead someone of ordinary skill in this art to simply combine letters representing stages and, using parentheses, discern new sequences since to do so would totally ignore considerations on the impact such sequences would or could have on the pulp. Hence, the suggestion in the art is not in the direction suggested by the Examiner, such suggestion apparently coming only from the present applicant's disclosure which is, of course, entirely impermissible. In any event, even if combined in the manner suggested by the Examiner, the present invention would not result for the reasons stated previously.

As such, the rejection of claims 1-3, 7-8 and 13-14 under 35 USC §103(a) as allegedly obvious over Tsai in view of Ambady et al is in error, and must be reversed.

**3. The Examiner's rejection of claims 4-6, 9-12 and 15-16 under 35 USC §103(a) as allegedly obvious Tsai and further in view of the "admitted art" discussion in the specification appearing at page 2, lines 19-25 is in error.**

As discussed previously, the Tsai patent does not implicitly or explicitly disclose a chlorine dioxide treatment stage following ozonation stage ***without washing*** therebetween. The Examiner however turns to the applicant's own specification at page 2, lines 19-25 and asserts that such a discussion cures the glaring deficiencies in Tsai so as to render claims 4-6, 9-12 and 15-16 "obvious" therefrom. Applicant emphatically disagrees.

All that the "admitted art" on page 2, lines 19-25 can fairly be said to disclose is that soda/anthraquinone (AQ) is a known chemical pulping process. Applicant does not dispute this. What applicant does dispute is that the passage on page 2, lines 19-25

somehow suggests – which it does not – to an ordinarily skilled person to employ the applicant's claimed sequence without washing between stages.

The “admitted art” in combination with Tsai therefore fails to render “obvious” the subject matter of claims 4-6, 9-12 and 15-16. As such, reversal of the rejection based thereon is in order.

- 4. The Examiner's rejection of claims 23 and 24 under 35 USC §103(a) as allegedly obvious over Tsai in view of Ambady et al and the “admitted art” discussion in the specification appearing at page 2, lines 19-25, and further in view of Swedish Application 81020828 or Nimmerfroh is in error.**

The same defect in the rejection as discussed above with respect to claims 4-6, 9-12 and 15-26 is also present in the Examiner's rejection of claims 23 and 24 under 35 USC 103 as it includes the asserted “admitted prior art” in combination with Tsai and Ambady et al, and further in view of Swedish Appln. 81020828 or Nimmerfroh et al. Applicant notes that the Swedish '828 application is inappropriate against the present invention as it discloses washing between the bleaching stages.

With regard to Nimmerfroh et al, applicant notes that ozone as a bleaching stage is disclosed, with the “E” stage being at a pH of no lower than 10 with washing following the “E” stage if chlorine dioxide is used. In contrast, the present invention contemplates the “E” stage as raising the pH of the material to no higher than 7, then following immediately with a chlorine dioxide, “D”, stage without washing. Therefore, the present application is distinctly different than, and could not “obviously” be derived from the sequence of bleaching presented in the Nimmerfroh et al article. Once skilled in this art would therefor not have employed a “ZED” sequence as defined in the present applicant's claims based on the Nimmerfroh et al reference.

With regard to the Examiner's comments on the “N” stage, Nimmerfroh et al does not identify the benefits of an “N” stage (neutral stage) followed by alkaline extraction as lowering the wash water requirement while improving the Kappa number. Additionally,

**STROMBERG**

Serial No. 09/722,420

this use of the neutral stage is not suggested, as the results without it are comparable and the additional concerns regarding the addition of the base material. For this reason also, Nimmerfroh et al is inappropriate as a reference against the present invention.

**X. CONCLUSION**

The Examiner's art-based rejections of the claims pending herein are in error and must be reversed as being inapposite to the proper standards for reviewing patentability under 35 USC §103(a). Such a decision is therefore solicited.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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**APPENDIX I**

**Apparatus Claims – USSN 09/722,420**

1. A method of treating a slurry of comminuted cellulosic fibrous material to produce a bleached chemical pulp, comprising:
  - (a) treating the material in a first stage with a gas containing ozone;
  - (b) treating the material in a second stage with a liquid containing chlorine dioxide;
  - (c) between (a) and (b) treating the material with an alkaline liquid to raise the pH of the material prior to (b) and so that no washing is performed between (a) and (b).
2. A method as in claim 1 wherein (c) is practiced to raise the pH of the material to at least about 6.0.
3. A method as in claim 1 further comprising (d), prior to (a), treating the material in an alkaline chemical pulping process, to produce chemical pulp.
4. A method as in claim 3 wherein (d) is practiced using an essentially sulfur-free pulping process.
5. A method as in claim 4 wherein (d) is practiced using an alkaline chemical pulping process that includes treatment with a strength or yield enhancing additive.
6. A method as in claim 5, wherein (d) is further practiced using an alkaline chemical pulping process includes a bulk delignification stage, and at least one stage prior to or during bulk delignification stage in which a liquid containing a first level of dissolved organic material is removed from the material and replaced with a second liquid having an at least about 50% lower level of dissolved organic material.

7. A method as in claim 1 wherein (a) is preceded by (a1) treating the material with a liquid containing chlorine dioxide, followed by (a2) treating the material with an alkaline liquid.

8. A method as in claim 7 wherein (a2) includes a treatment with oxygen, a peroxide, or both.

9. A method as recited in claim 4 wherein (d) is practiced using a soda pulping process.

10. A method as recited in claim 4 wherein (d) is practiced using a soda/AQ pulping process.

11. A method as recited in claim 10 wherein (c) is practiced to raise the pH of the material to at least about 7.0

12. A method as recited in claim 2 further comprising (d), prior to step (a) treating the material in an alkaline chemical pulping process that includes at least one selected from the group consisting of anthraquinones and polysulfides.

13. A method as in claim 2 wherein (a) is preceded by (a1) treating the material with a liquid containing chlorine dioxide, followed by (a2) treating the material with an alkaline liquid.

14. A method as in claim 13 further comprising (d), prior to (a), treating the material in an alkaline chemical pulping process, to produce chemical pulp.

15. A method as recited in claim 14 wherein (d) is practiced using a soda/AQ pulping process.

16. A method as in claim 15, wherein (d) is further practiced using an alkaline chemical pulping process includes a bulk delignification stage, and at least one stage prior to or during bulk delignification stage in which a liquid containing a first level of

dissolved organic material is removed from the material and replaced with a second liquid having an at least 50% lower level of dissolved organic material.

23. A method of ECF treatment of comminuted cellulosic fibrous material comprising the sequence soda/AQ cooking, and then one of D-E<sub>p</sub>-(ZEND), or D-E<sub>o</sub>-(ZEND), or D-E<sub>op</sub>-(ZEND).

24. A method as in claim 23 wherein the treatment is practiced to produce pulp with a brightness over 89% ISO.